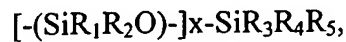


WE CLAIM:

1                   1. A vulcanizable rubber composition comprising a reinforcing white  
 2 filler, which can be used for the manufacture of a tire, wherein the rubber composition  
 3 comprises a diene block copolymer which is intended to interact with said reinforcing  
 4 white filler, said diene block copolymer comprising on at least one end thereof a  
 5 polysiloxane block which ends in a trialkylsilyl group, said polysiloxane block  
 6 corresponding to the formula:



7  
 8                   in which  $\text{R}_1$ ,  $\text{R}_2$ ,  $\text{R}_3$ ,  $\text{R}_4$  and  $\text{R}_5$  each represent alkyl groups having  
 9 from 1 to 20 carbon atoms, and in which  $x$  is a natural integer other than zero.

1                   2. A rubber composition according to Claim 1, wherein said diene block  
 2 copolymer comprises styrene-butadiene units.

1                   3. A rubber composition according to Claim 1, wherein said polysiloxane  
 2 block comprises a polydimethylsiloxane.

1                   4. A rubber composition according to Claim 1, wherein said trialkylsilyl  
 2 group comprises a butyl group.

1                   5. A rubber composition according to Claim 1, wherein said polysiloxane  
 2 block has a molecular weight of between 500 and 5,000 g/mol.

1                   6. A rubber composition according to Claim 1, wherein said reinforcing  
 2 white filler comprises greater than 50% of the mass fraction of reinforcing filler in the  
 3 rubber composition.

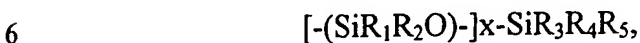
1            7. A rubber composition according to Claim 6, wherein said reinforcing  
2    white filler further comprises carbon black in an amount of less than or equal to 30% of  
3    the mass fraction of said reinforcing filler.

1                   8. A rubber composition according to Claim 1, wherein said reinforcing  
2   white filler comprises silica.

1                    9. A rubber composition according to Claim 1, wherein the composition  
2 comprises a blend of natural rubber and said diene block copolymer, wherein the natural  
3 rubber comprises from 1 to 70 parts by weight per 100 parts by weight of said diene  
4 block copolymer.

1                    10. A rubber composition according to Claim 1, wherein the composition  
2 comprises a blend of a synthetic elastomer and/or a starred diene elastomer and diene  
3 block copolymer, wherein said synthetic elastomer and/or starred diene elastomer  
4 comprises from 1 to 70 parts by weight per 100 parts by weight of said diene block  
5 copolymer.

1 11. A process for the preparation of a rubber composition comprising a  
2 reinforcing white filler, wherein the rubber composition comprises a diene block  
3 copolymer which is intended to interact with said reinforcing white filler, said diene  
4 block copolymer comprising on at least one end thereof a polysiloxane block which ends  
5 in a trialkylsilyl group, said polysiloxane block corresponding to the formula:



7 in which R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub> and R<sub>5</sub> represent alkyl groups having from 1 to  
8 20 carbon atoms, and in which x is a natural integer other than zero,

9                    wherein the process comprises

10                   (a) reacting a living diene polymer with a functionalized polysiloxane  
11       comprising at one of its chain ends a halo-organosilane function and, at its other chain  
12       end, a trialkylsilyl group, to produce said diene block copolymer comprising said  
13       polysiloxane block which ends in a trialkylsilyl group, and  
14                   (b) mixing, by thermomechanical working, said diene block copolymer  
15       with silica, and with conventional additives for obtaining a vulcanizable rubber  
16       composition.

1                   12. A process according to Claim 11, further comprising grafting on said  
2       living diene polymer another polymer which comprises said polysiloxane that has been  
3       obtained anionically with an initiator comprising an alkyl group as carbanion to obtain  
4       the diene block copolymer.

1                   13. A process according to Claim 11 or 12, wherein the diene polymer  
2       comprises a homopolymer obtained by polymerization of a conjugated diene monomer  
3       having 4 to 12 carbon atoms.

1                   14. A process according to Claim 11 or 12, wherein the diene polymer  
2       comprises a copolymer obtained by copolymerization of one or more dienes which are  
3       conjugated together, or with one or more vinyl aromatic compounds having 8 to 20  
4       carbon atoms, said copolymer containing 20% to 99% by weight of diene units, and 1 to  
5       80% by weight of vinyl aromatic units.

1                   15. A process according to Claim 12, wherein said initiator comprises an  
2       alkyllithium or a lithium amide.

1                   16. A process according to Claim 11 or 12, further comprising preparing  
2   said polysiloxane by polymerizing a cyclic siloxane initiated by an organolithium  
3   compound to form a polysiloxane, and functionalizing said polysiloxane with a  
4   dihalo-organosilane.

1                   17. A preparation process according to Claim 16, wherein the cyclic  
2   siloxane is hexamethylcyclotrisiloxane, the initiator is n-butyllithium and the  
3   functionalizing agent is dichlorodimethylsilane.

1                   18. A tire, characterized in that it comprises a tread containing a rubber  
2   composition according to one of Claims 1 to 10.